Parcel C Remedial Action

Project Update for Parcel C Hunters Point Naval Shipyard San Francisco, California

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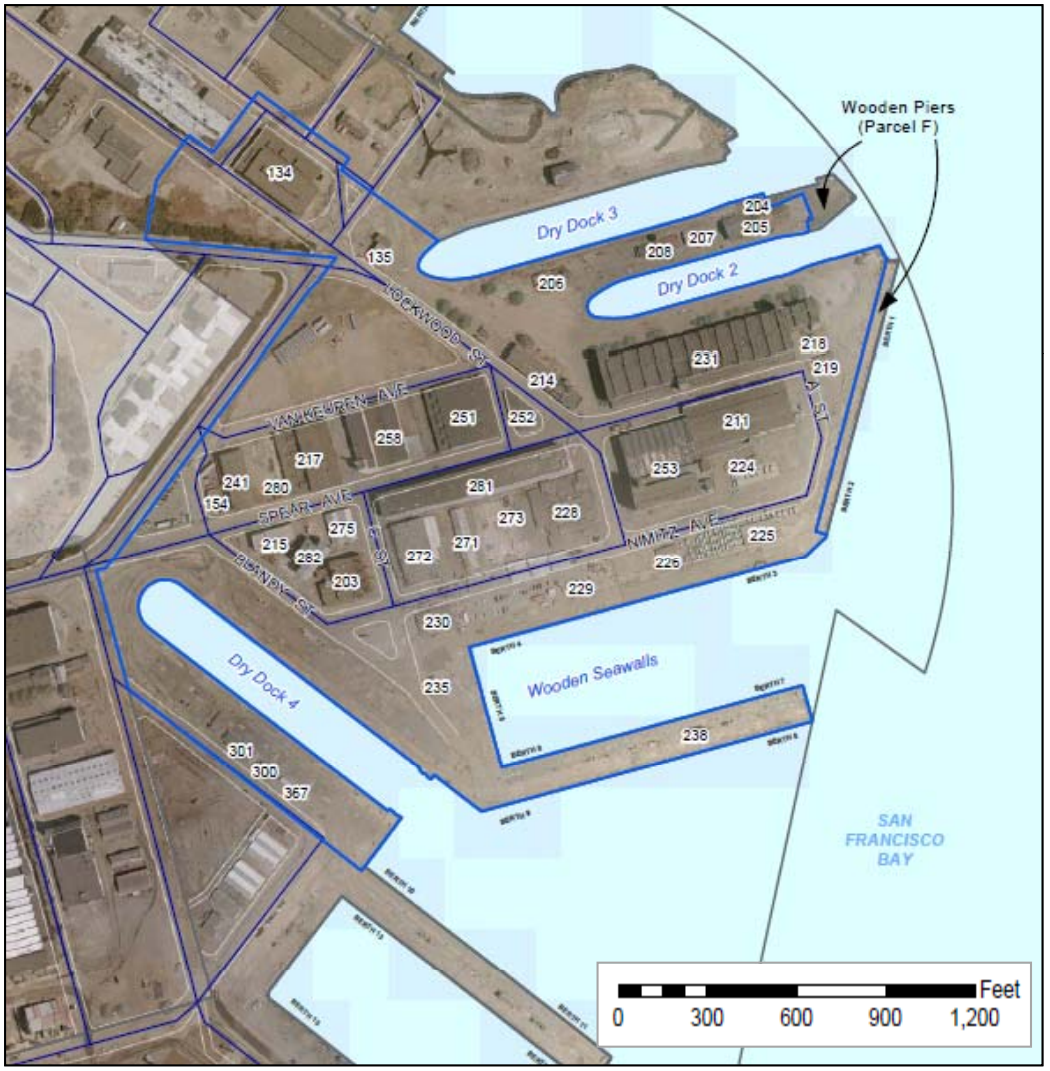
BRAC Program Management Office West

BCT Meeting, May 29, 2013

Parcel C Map



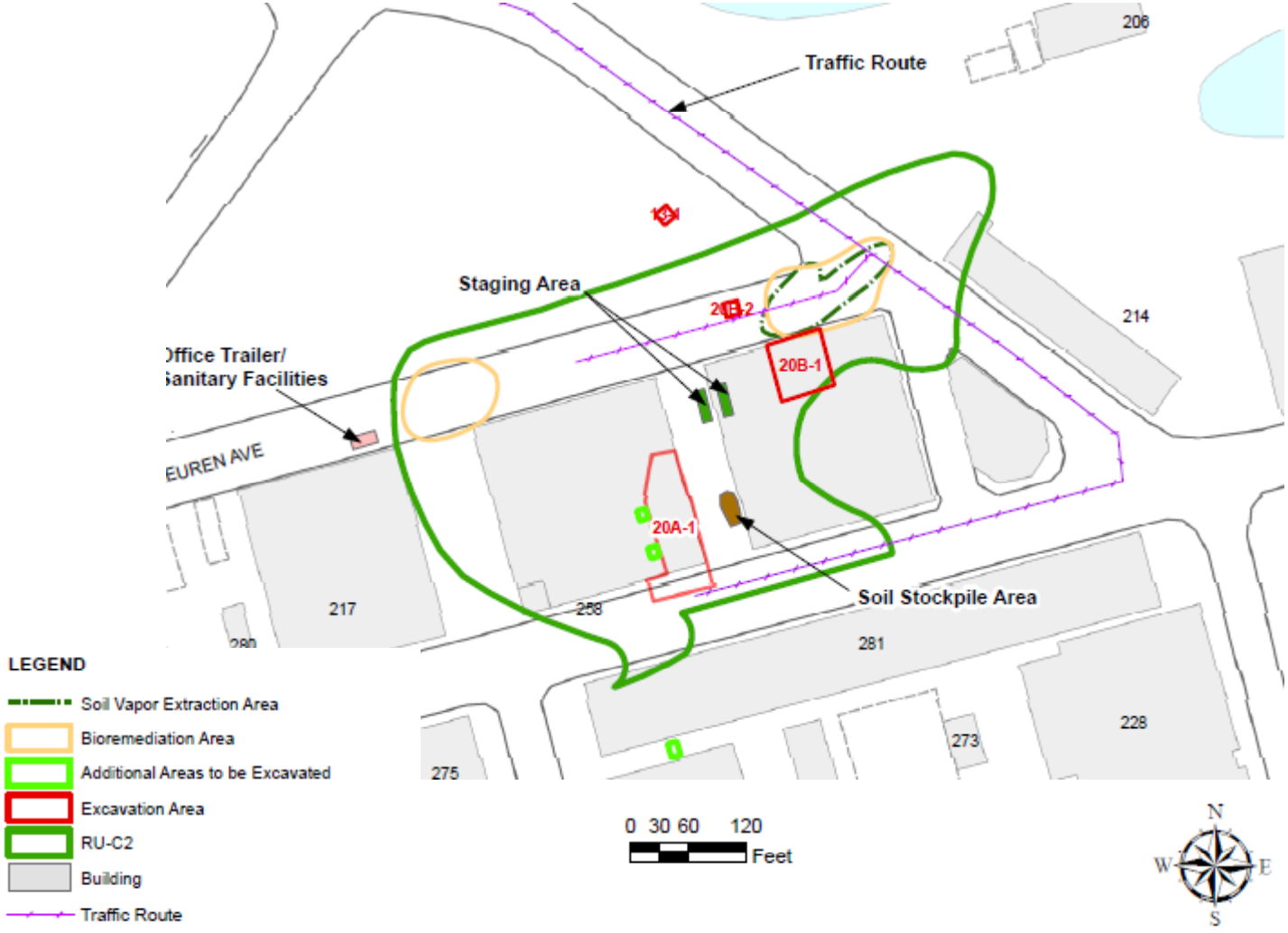
Parcel C Boundary

231 Building Number

Agenda

- RU-C2 Update
- RU-C1, 4, 5 Update
- Soil Excavation Tech Memo Update
- ESD
- Parcel C Durable Cover

RU-C2 Map


Traffic Route
Staging Area
Office Trailer/
Sanitary Facilities
EUREN AVE
20B-1
20A-1
Soil Stockpile Area
206
214
217
258
281
228
273
275
LEGEND
Soil Vapor Extraction Area
Bioremediation Area
Additional Areas to be Excavated
Excavation Area
RU-C2
Building
Traffic Route
0 30 60 120
Feet
N
W
E
S

RU-C2 Update

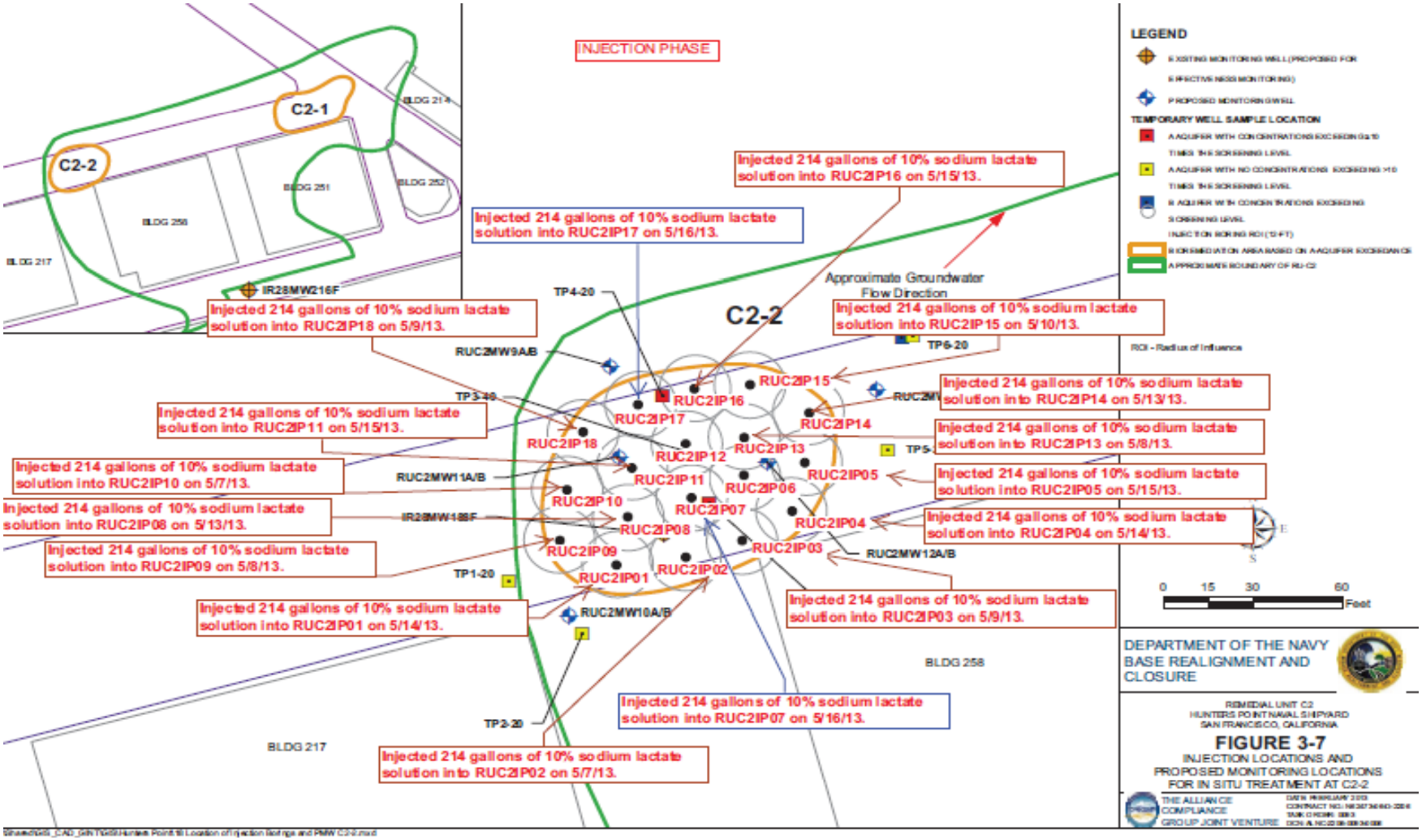
- Decommissioned 6 temporary monitoring wells – March 2013.
- Installed 16 monitoring wells at Building 251 (C2-1 plume) and 10 monitoring wells at Building 258 (C2-2 Plume) – completed April 2013.
- Installed 5 soil vapor probes and 6 SVE wells at Building 251 (C2-1 plume) – completed April 2013.
- Finished developing all newly installed monitoring wells – completed on May 15th, 2013.
- Finished groundwater sampling at Building 258 (C2-2 plume) and Building 251 (C2-1 Plume) – completed on May 22nd, 2013.
- Installed injection wells and injected at 18 locations at Building 258 (C2-2 Plume) – completed on May 17th.
- Began installing injection wells and injecting lactate at Building 251 (C2-1 Plume). – Total of 23 locations – estimated completion date of June 7, 2013.

RUC2 – Groundwater Sampling

Groundwater Sampling

- Groundwater sampling commenced on April 23rd and concluded on May 22nd.
- Sampled 10 monitoring wells (5 shallow and 5 deep) at Building 258 (C2-2 Plume).
- Sampled 17 monitoring wells (9 shallow and 8 deep) at Building 251 (C2-1) plume

Injection Locations and Monitoring Locations for In Situ Treatment at Building 258 (C2-2)



RUC2 – Lactate Injections

Injection of Lactate at Building 258 (C2-2) Plume.

- At each location, an injection well was installed for future bio-augmentation and injections (if necessary).

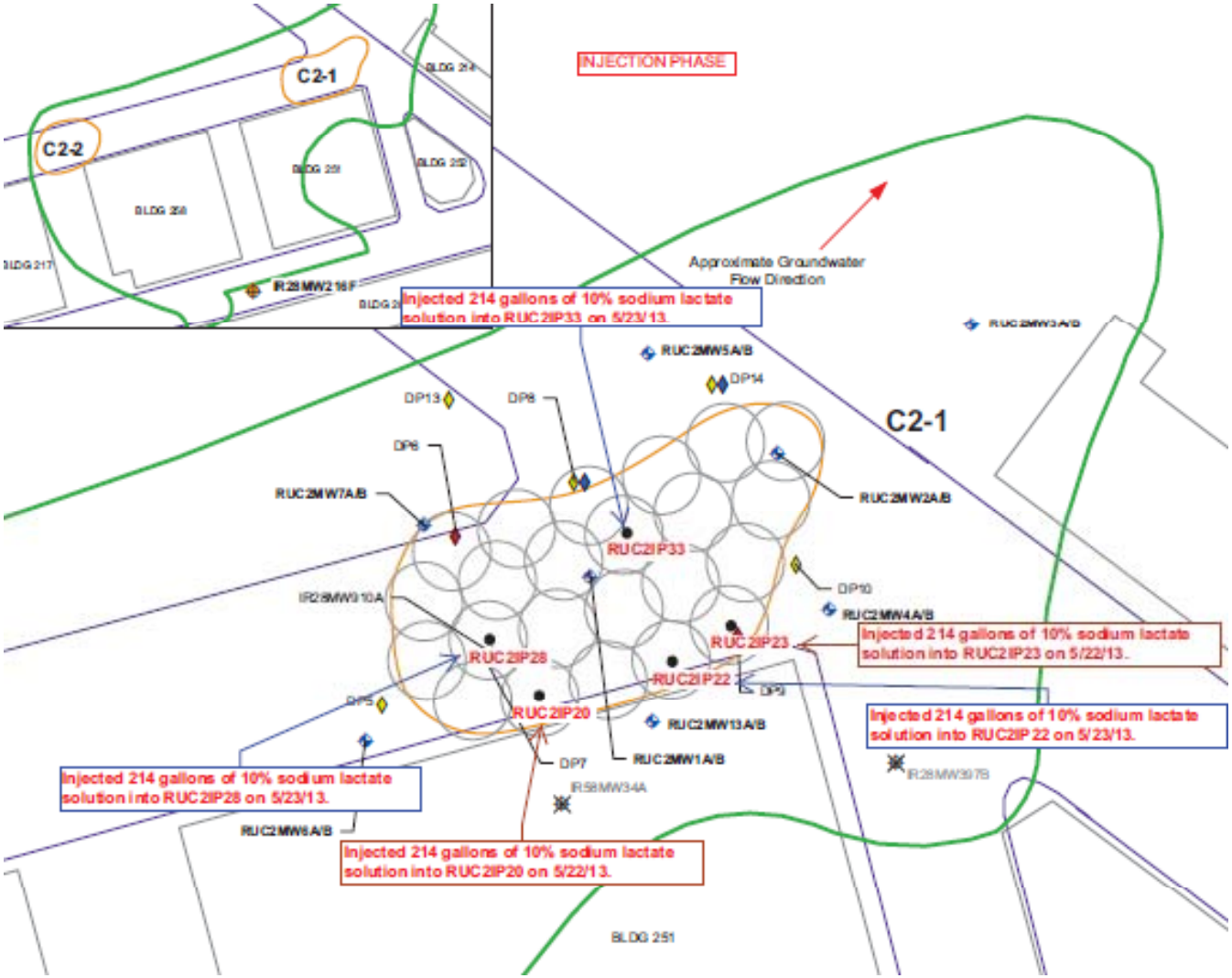
- Injected 214 gallons of 10% lactate solution at each location (4-5 intervals).

- Injection wells were installed at 20 – 25 feet bgs (depending on field conditions), with 15-20 foot pre-packed screens.

RUC2 – Lactate Injections

Injection of lactate solution at Building 258 (C2-2 Plume), location RUC2IP10

Injection Locations and Monitoring Locations for In Situ Treatment at Building 251 (C2-1)

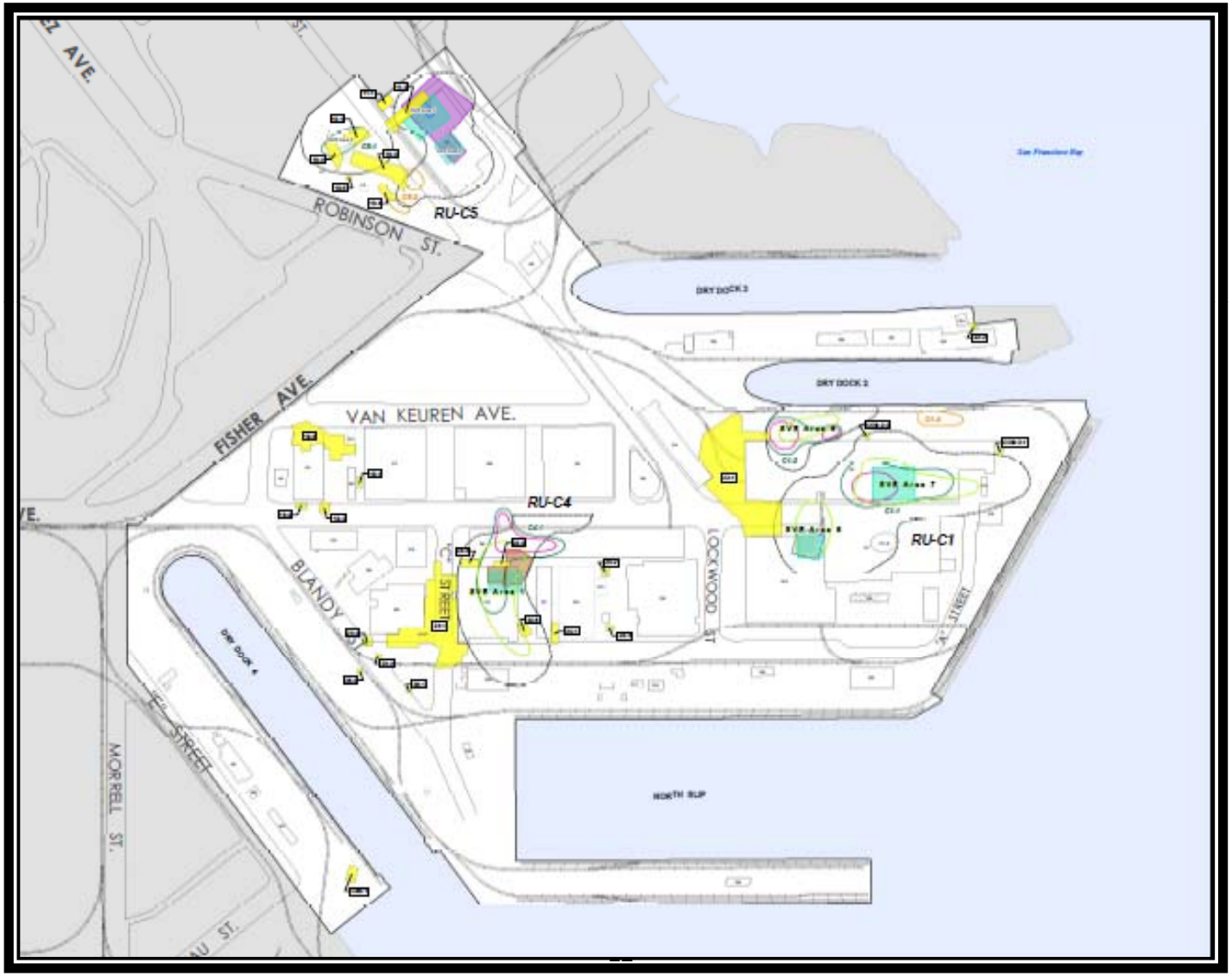


RU-C2 -Schedule

Schedule

- Monitoring well, SVE well, and soil vapor probe installation 3/18/1013 – 4/23/2013
- Baseline groundwater sampling – 4/23/2013 – 5/22/2013
- Excavations – 6/17/2013 – pending
- Installation of SVE system – 7/8/2013 – pending
  (following excavation 20B-1 which is adjacent to the SVE area)
- ISB injections 5/6/2013 – 6/7/2013
- Bio-augmentation injections – 6/17/2013
  (pending DO and ORP conditions)
- Groundwater sampling (1 month post injection event) – 7/17/2013
  (additional events 3, 6, 9, and 12 months after injections)

RUC-1, 4, 5 Activities



RUC-1, 4, 5 Update

- Final Tech Memo to be issued 6/20/2013
  [Appendix G of Final Work Plan (WP)]
- Final WP to be issued 6/20/2013
- Mobilization to field 6/24/2013
  - Based on radiological work completed, excavations will begin in area RU-C5
  - Work in RU-C4 will follow completion of RU-C5, and then excavations in RU-C1

Sequence of Remediation Activities RUs C5, C5, and C1

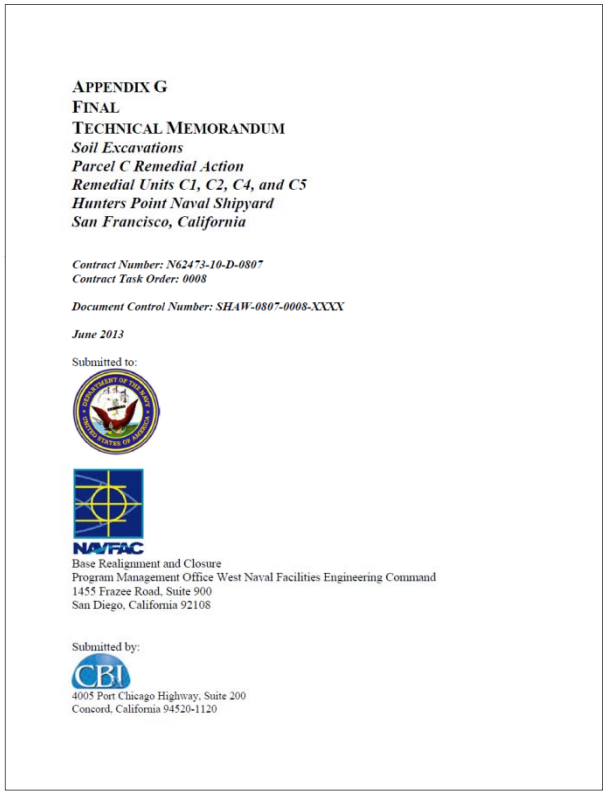
1. Decommissioning of monitoring wells in excavation areas
2. Installation and development of the remediation monitoring wells (excluding areas where excavations will occur)
3. Cleaning and capping of underground solvent pipes at Buildings 253 and 281
4. Excavation of soil in SVE and/or groundwater remediation areas
5. Excavation of soil in all other remedial areas
6. Installation and development of replacement monitoring wells and remediation monitoring wells in excavation areas
7. Installation and sampling of SVE wells and VM wells in SVE areas
8. Sampling of remediation groundwater monitoring wells (pre-remediation baseline conditions)
9. Sampling of all SVE and soil VM wells (pre-remediation baseline conditions)
10. Injection of ISB substrate to be followed by ZVI
11. Collection of post-injection samples
12. Installation of SVE treatment units and piping
13. Shake down of SVE units
14. Completion of post-injection sampling in ZVI and ISB areas
15. Start Monitored Natural Attenuation

Soil Excavation Tech Memo

- Application of tiered approach
  - Tier 1 locations: excavation areas where soil concentrations are greater than 10 times the RGs as established in the ROD (“Tier 1 action levels”)
  - Tier 2 locations: excavation areas where soil concentrations are greater than 5 times the RGs (“Tier 2 action levels”)
  - Tier 3 locations: excavation areas where soil concentrations are greater than the RRGs (“Tier 3 action levels”)
- Tier action levels applied to metals and PCBs only
- Tiers 1 and 2 excavation areas:
  - 22-2, 23-1, 24-3, 24-3, 24-5, 10-3, 10-4, 11-2
- *Screening level human health risk assessment to verify estimated residual cancer risk and estimated residual noncancer hazard index were acceptable and/or within the acceptable risk range* (Section 2.1 of the tech memo)

Soil Excavation Tech Memo

- Section 1.0 - Technical Memorandum introduction and description of the purpose and objectives of the work, the triad approach and the organization of the document
- Section 2.0 - Risk management associated with the tiered excavation approach
- Section 3.0 - Actions to address contaminated soil and technical rationale for the change
- Section 4.0 - Exit strategy for metals
- Section 5.0 - Regulatory documentation recommendations as to memorialize the changes described in this Technical Memorandum
- Section 6.0 - Summary of this Technical Memorandum
- Section 7.0 - References cited in the Technical Memorandum



APPENDIX G
FINAL
TECHNICAL MEMORANDUM
Soil Excavations
Parcel C Remedial Action
Remedial Units C1, C2, C4, and C5
Hunters Point Naval Shipyard
San Francisco, California

Contract Number: N62473-10-D-0807
Contract Task Order: 0008

Document Control Number: SHAW-0807-0008-XXXX

June 2013

Submitted to:

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Screening Level HHRA

Excavation Area	Estimated Residual Cancer Risk	Estimated Residual Noncancer Hazard Index	Comments
22-2	0.0E+00	0	Acceptable
23-1	4.1E-06	4.5	Within acceptable risk range, HI without HPAL COCs = 2.3 (1)
24-3	3.07E-04	1.9	Above risk range, CR without HPAL COC = 1.5E-5; Above HI threshold, HI without HPAL COC = 0.1 (1,2)
24-4	0.0E+00	0.2	Acceptable
24-5	0.0E+00	5.8	HI without HPAL COCs = 4.1 (1)
10-3	3.1E-06	0	Within acceptable risk range
10-4	1.1E-07	0	Acceptable
11-2	2.1E-06	0	Within acceptable risk range

Notes:
•HI without HPAL COC was estimated by subtracting HQ associated with HPAL from total estimated HI.
•CR without HPAL COC was estimated by subtracting CR associated with HPAL from total estimated CR.
COC – contaminant of concern
CR – cancer risk
HI – hazard index
HPAL – Hunters Point Ambient Level

Explanation of Significant Difference (ESD)

Objective: Minimize removal of soil that does not contain contamination known to exceed the Parcel C RGs

- Introduced “tiered” approach for eight (of twenty-seven) excavation areas
- Screening level human health risk assessment (HHRA) conducted for the eight Tiers 1 and 2 excavation areas to provide basis for appropriate risk management and verify the acceptability of leaving soil in place
- By revising the excavations based on historical sample data and applying Tier 1, 2, and 3 scenarios, the estimated volume of soil that will require removal was reduced by approximately 16,400 bcy (39 percent) (not including potential over-excavation requirements)
- Approximately 10,400 bcy (24 percent) of the volume was reduced due to ROD changes (Tiers 1 and 2)
- Approximately 2,300 bcy (5 percent) of the volume was reduced as a result of RD changes or clarifications
- Remaining volume reduction is a result of excavation depth reductions based on actual sample data (as extracted from the Navy’s database NIRIS)

Durable Covers

- Durable Covers
  - New asphalt
  - Asphalt repair
  - Soil cover
- To remain in place following implementation of other elements of selected remedy
  - Metals remaining in soil exceeding RGs

Questions